

Fig.1

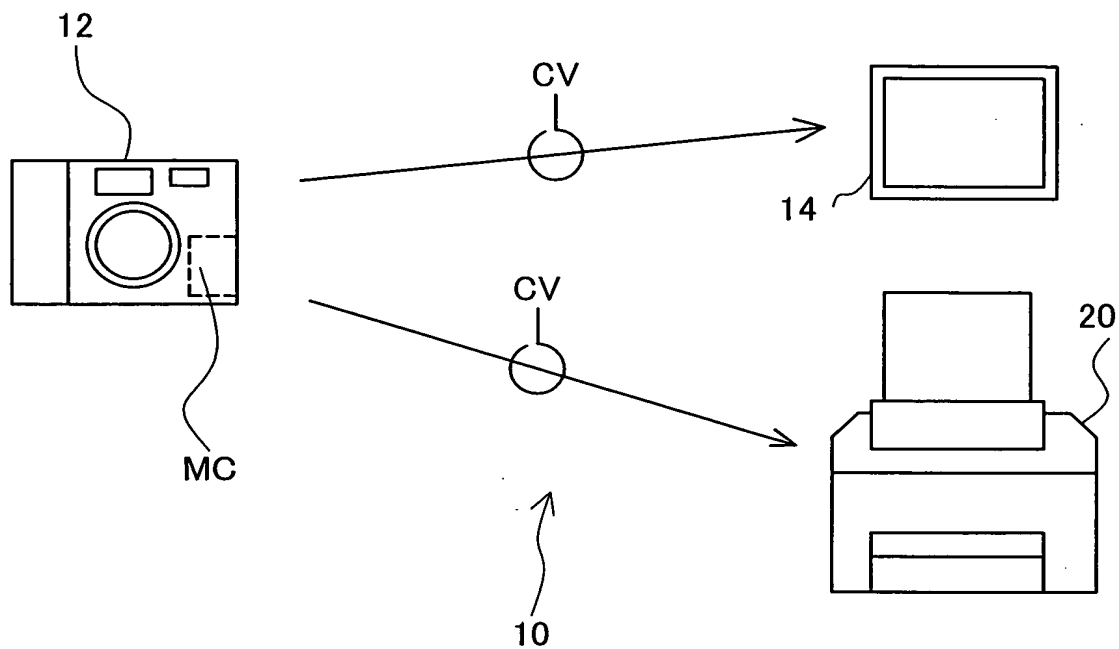


Fig.2

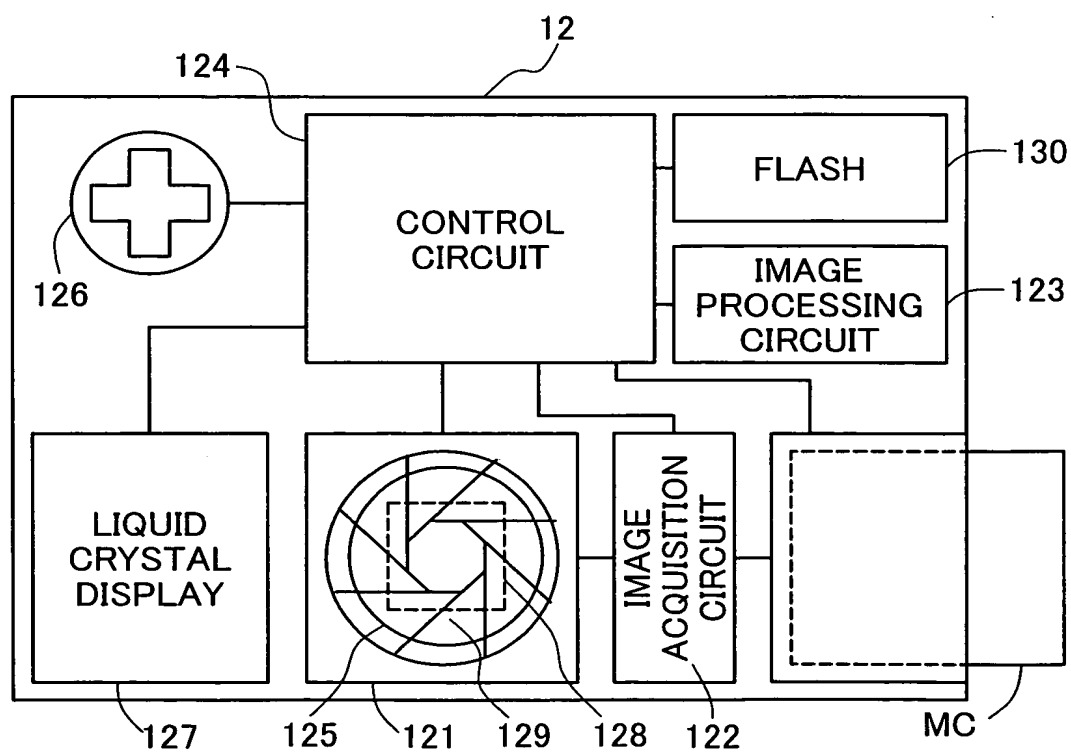


Fig.3

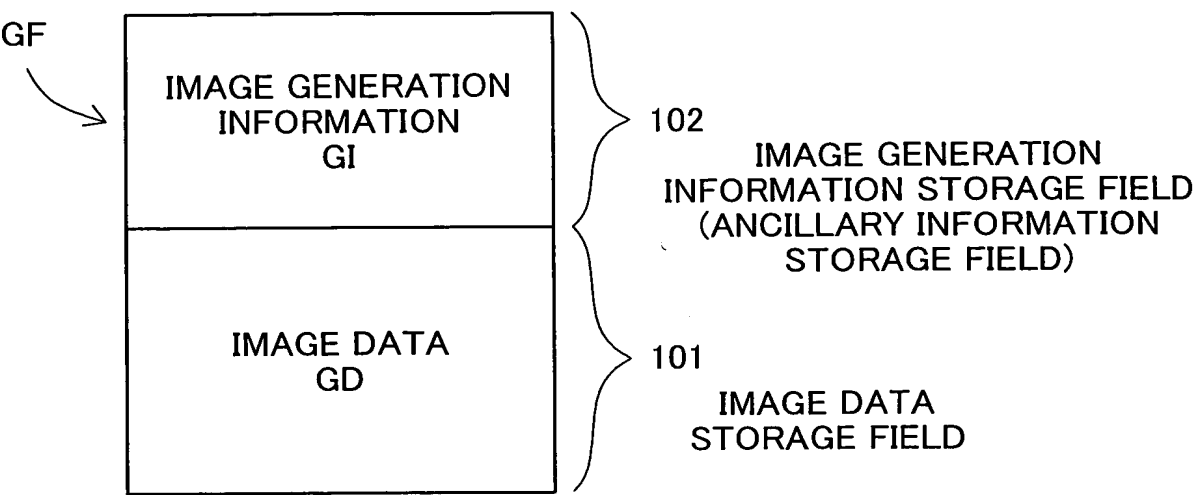
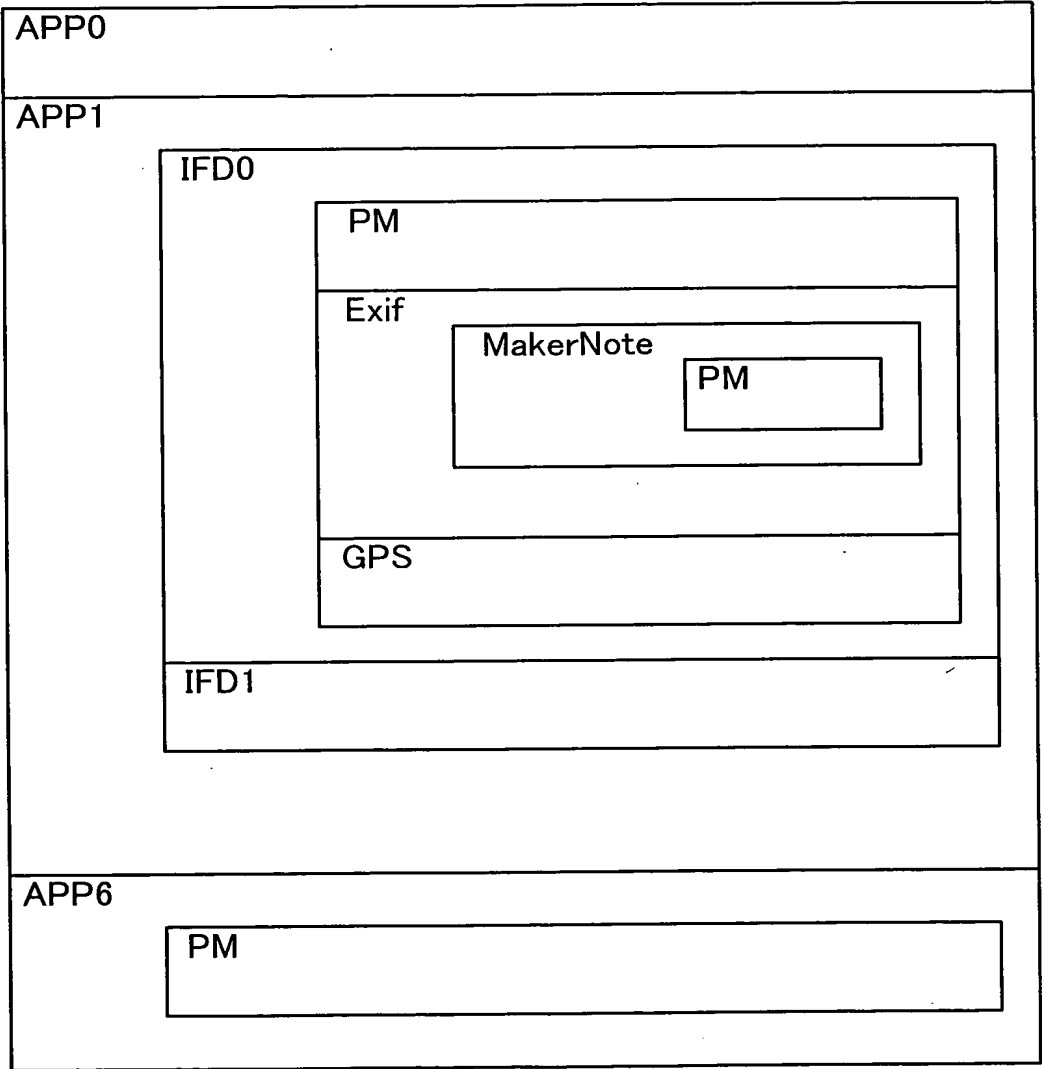


Fig.4



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Fig.5

Tag name	Parameter value
Light source	clear sky
Flash	<div>• auto flash mode</div> <div>• flash on</div> <div>• reflected light sensor present</div> <div>• reflected light sensed</div>
Subject distance	1 (m)
Subject area	<div>• center coordinates (640, 512)</div> <div>• width (324)</div> <div>• height (375)</div>
Flash intensity	1000 (BCPS)
Aperture value	F8
ISO speed rate	100



Fig.6

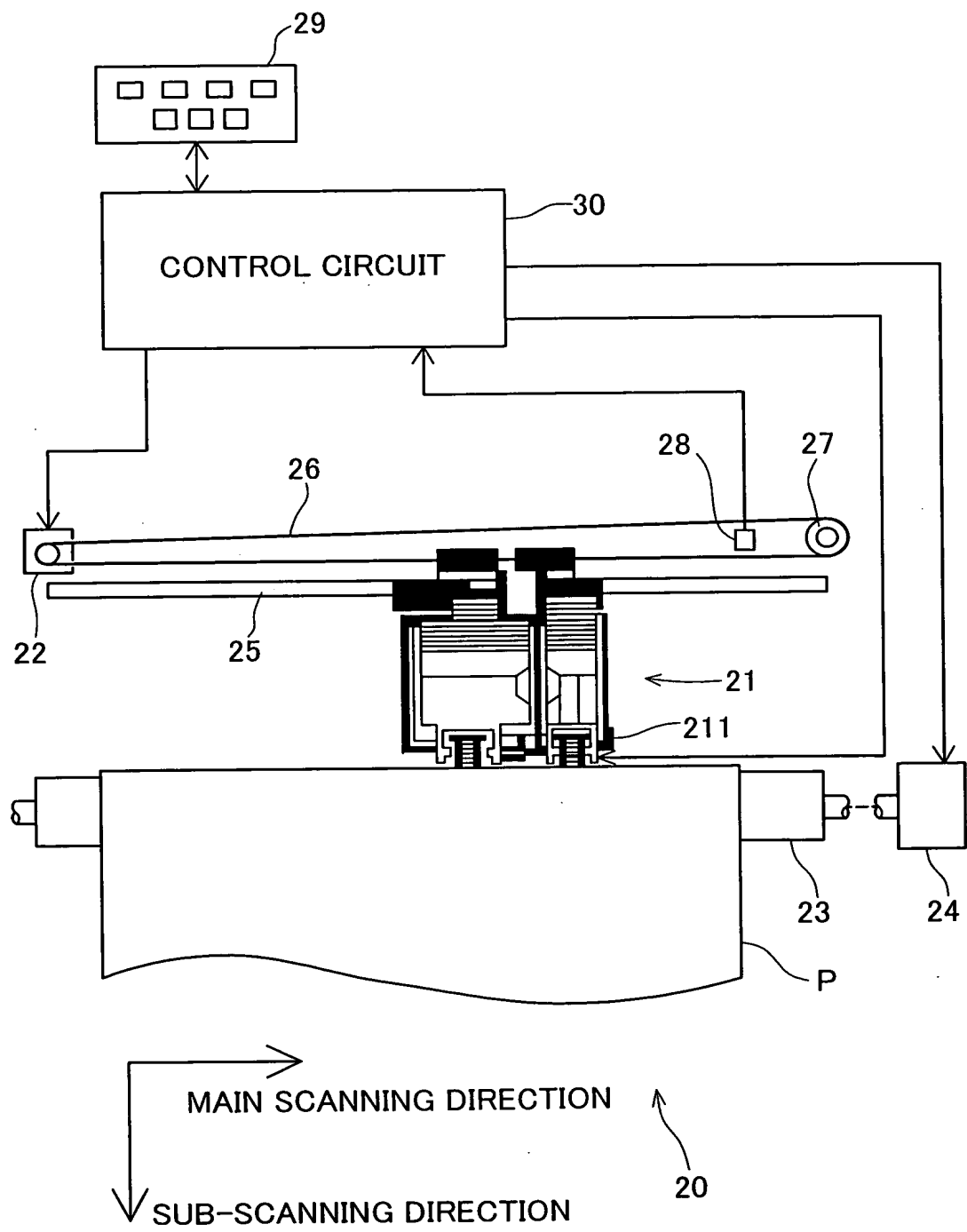


Fig.7

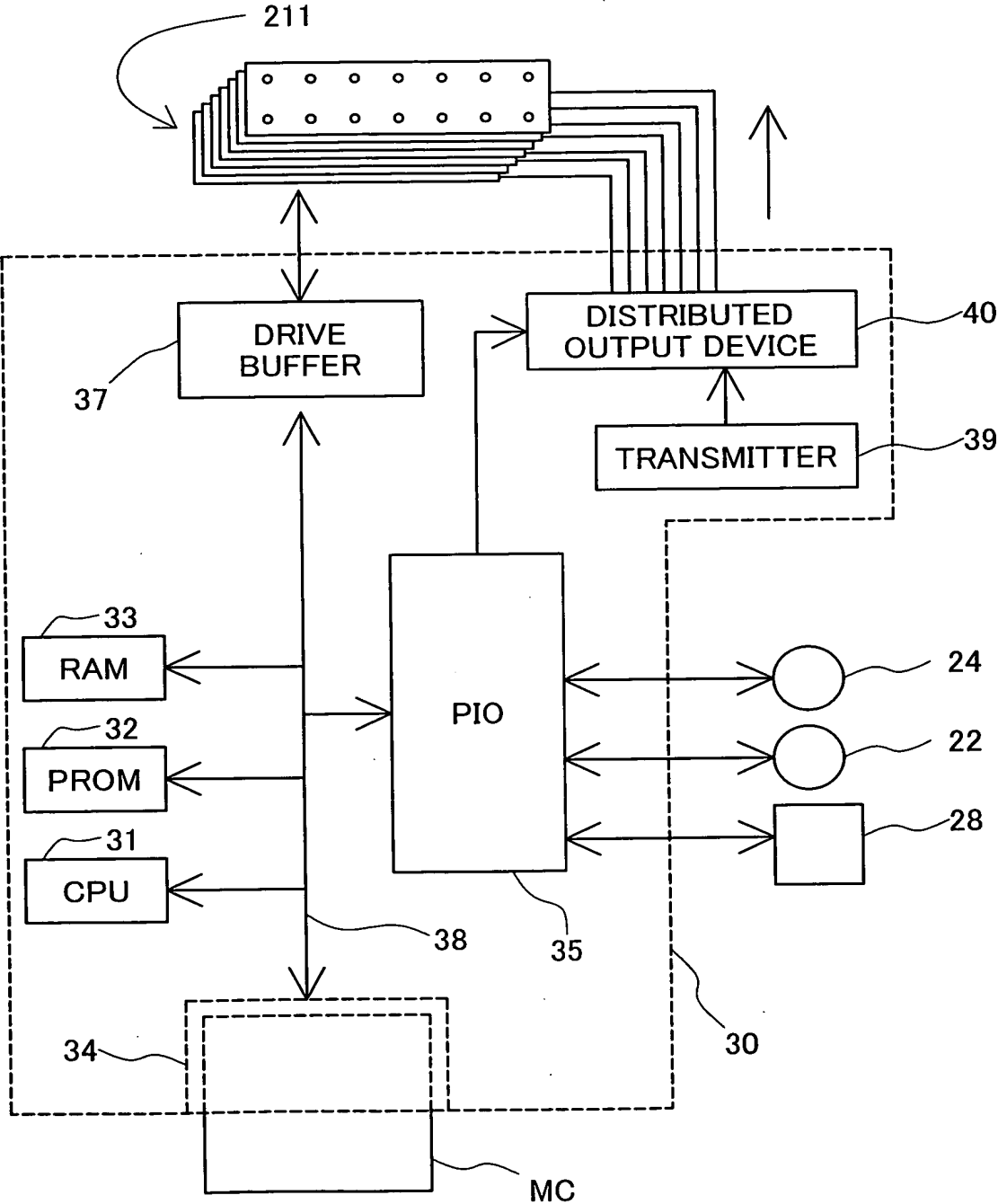


Fig.8

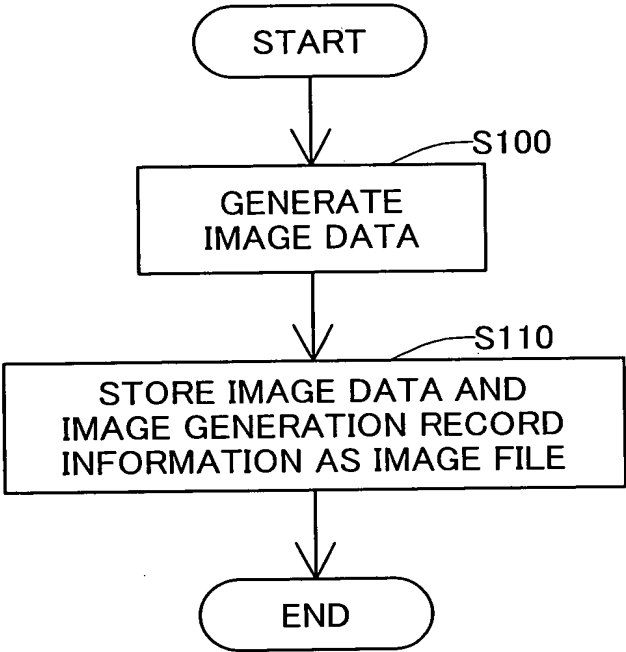


Fig.9

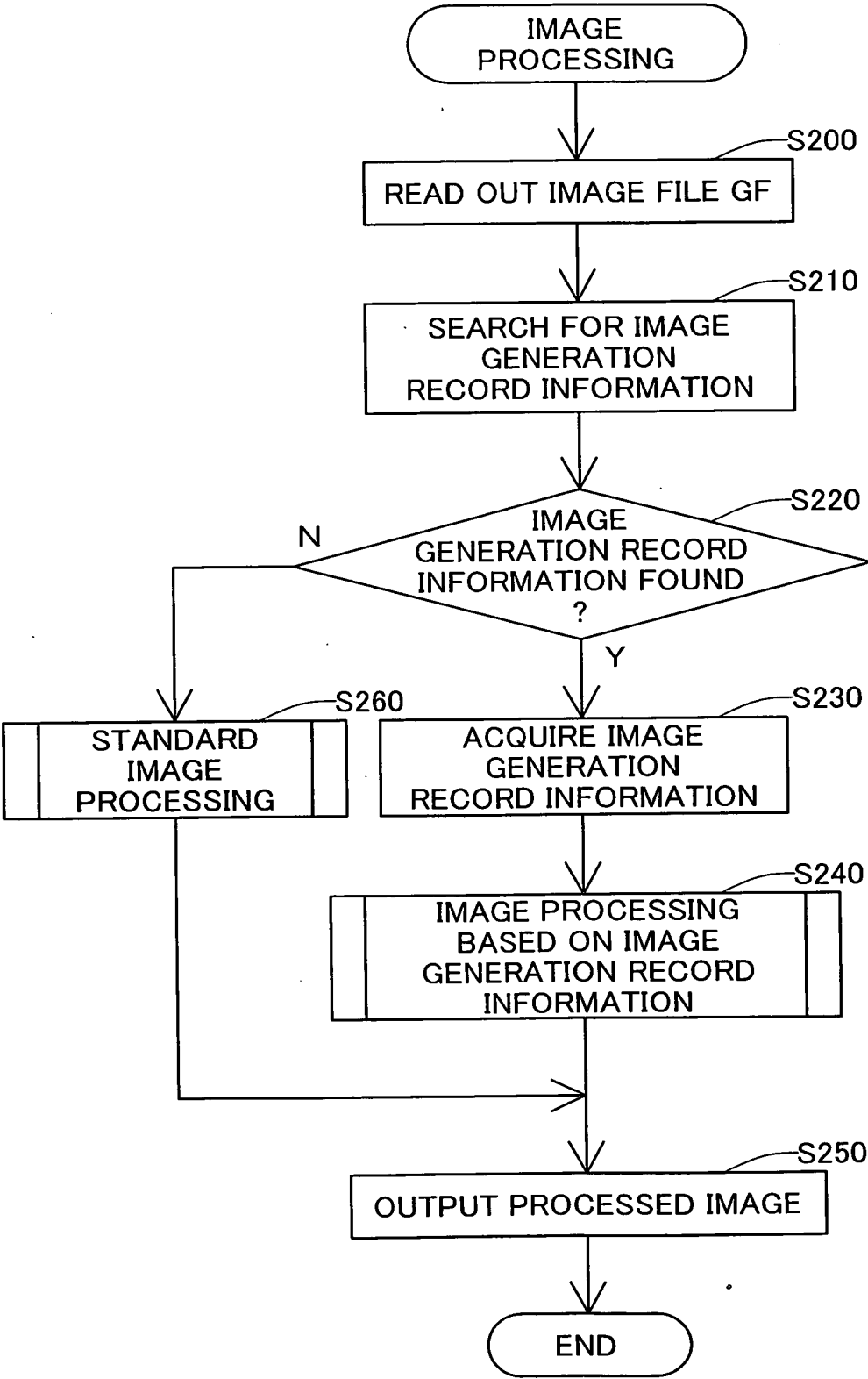


Fig.10

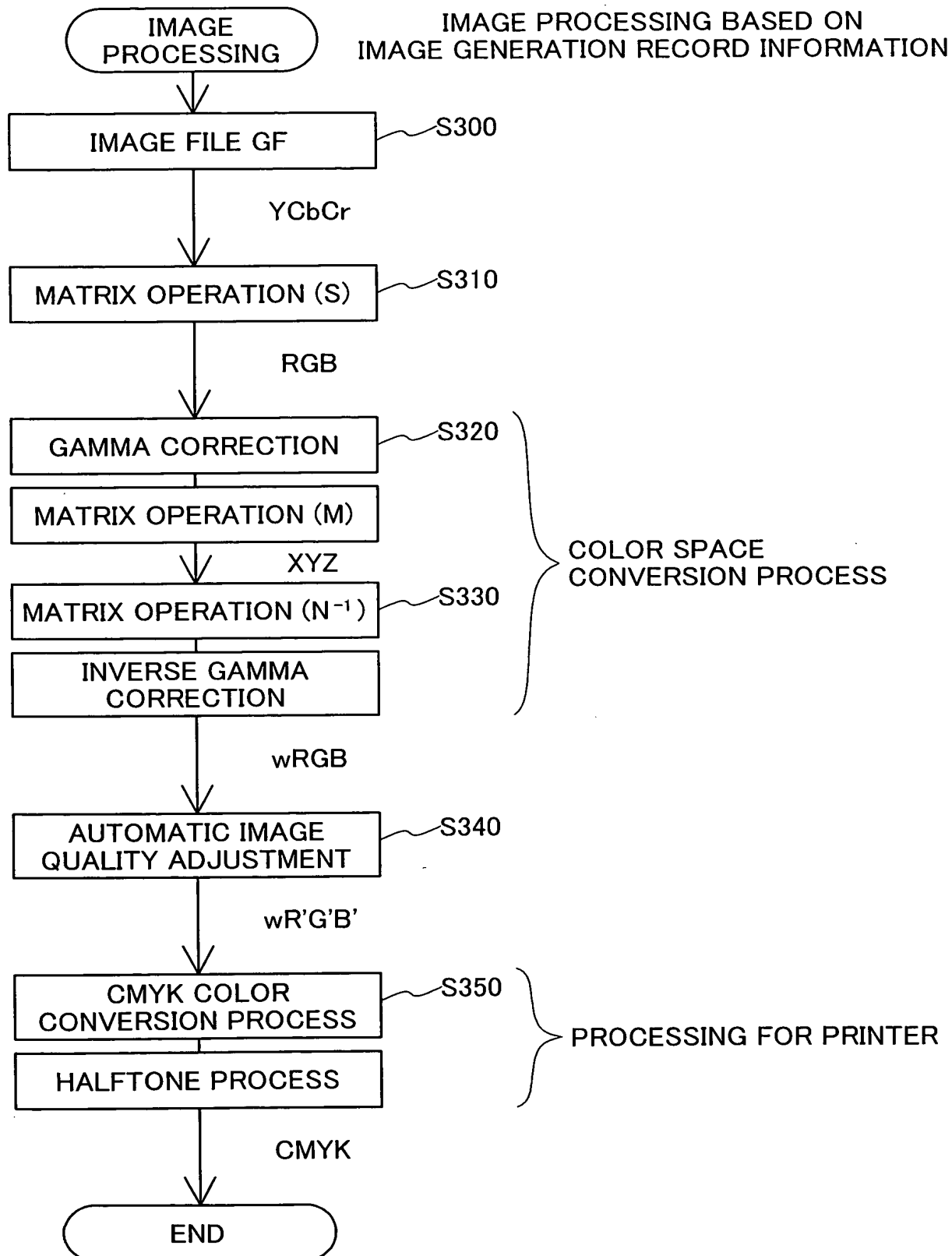


Fig.11

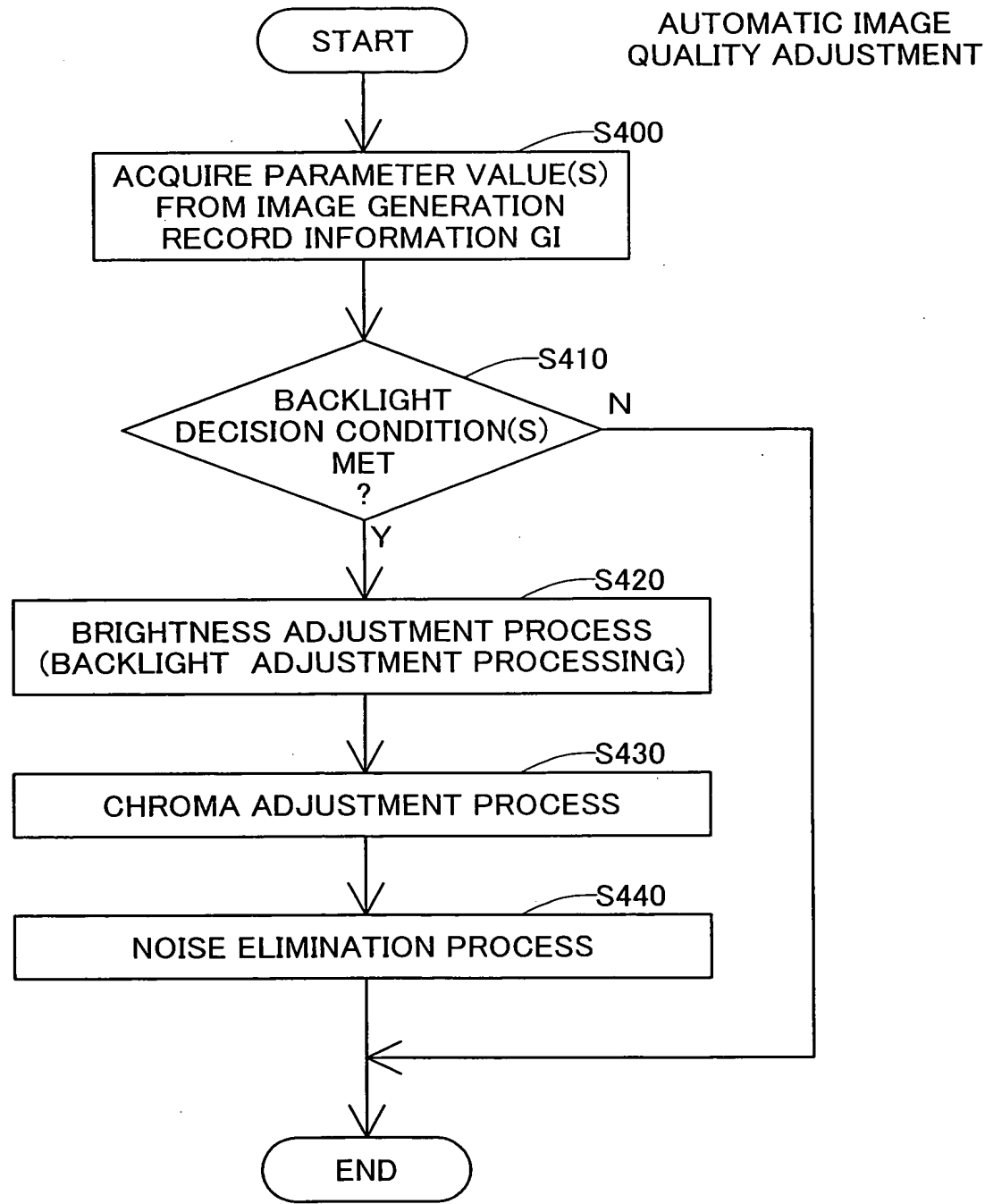


Fig.12(a)

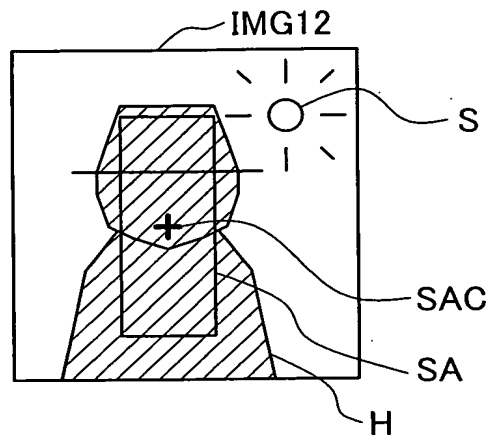


Fig.12(b)

BAave: average brightness value within subject area
 Bave: average brightness value of entire image
 k: predetermined constant

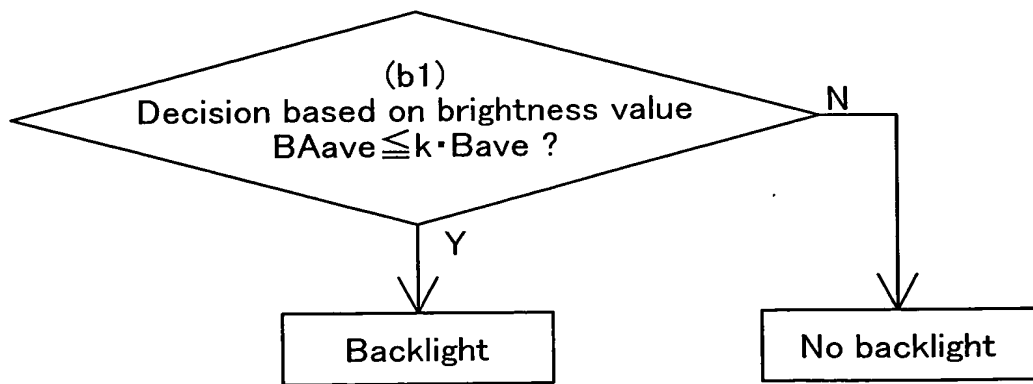


Fig.13(a)

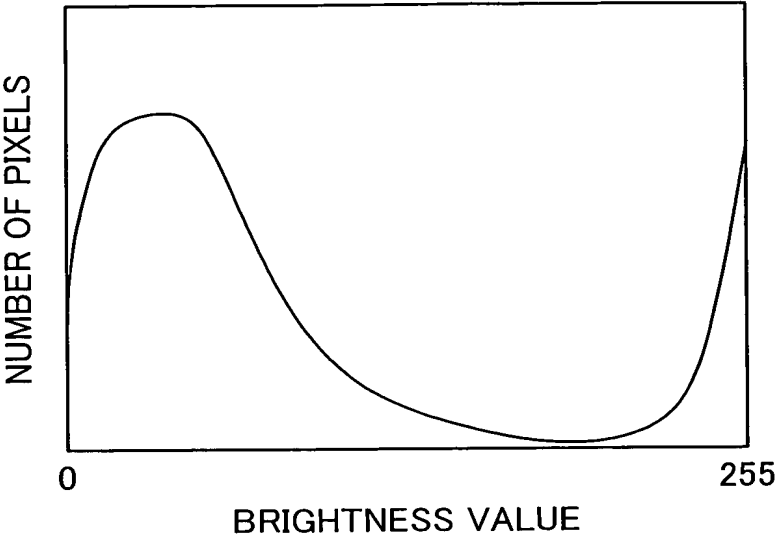


Fig.13(b)

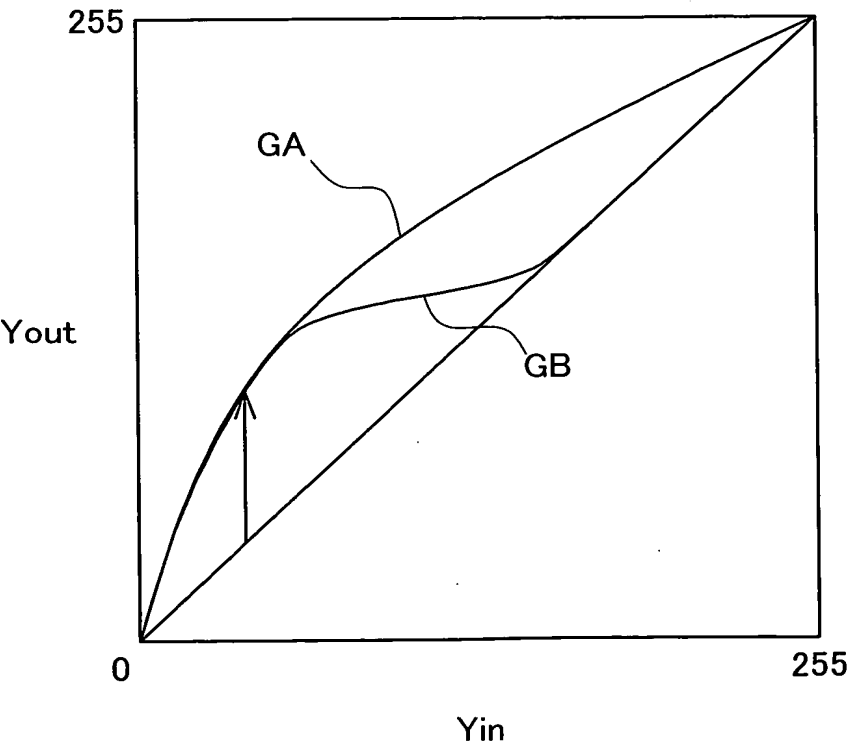


Fig.14(a)

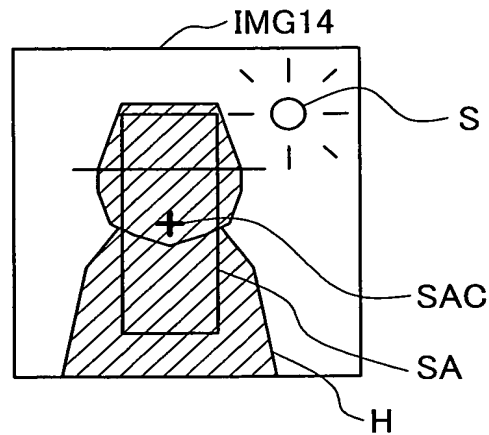


Fig.14(b)

BAave: average brightness value within subject area
 Bave: average brightness value of entire image
 k: predetermined constant

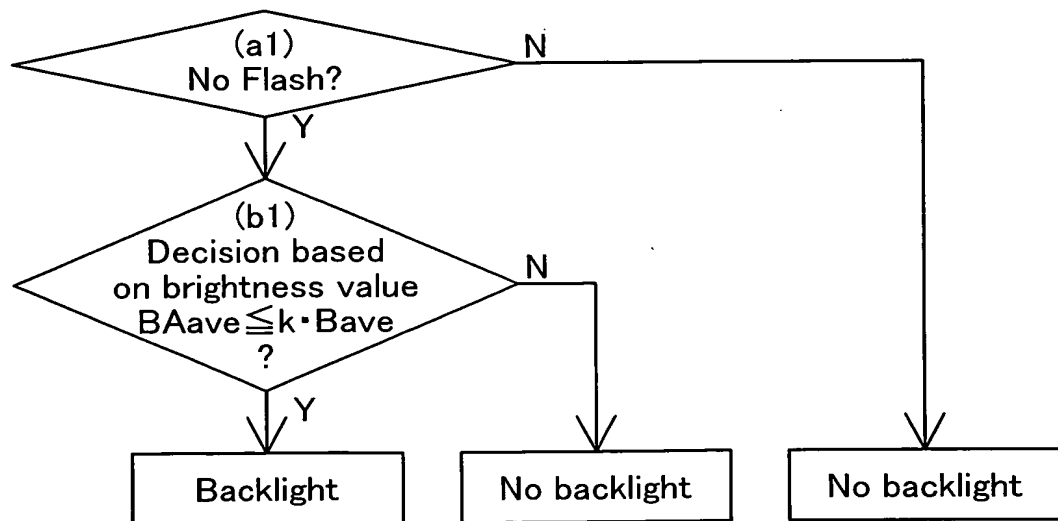


Fig.15(a)

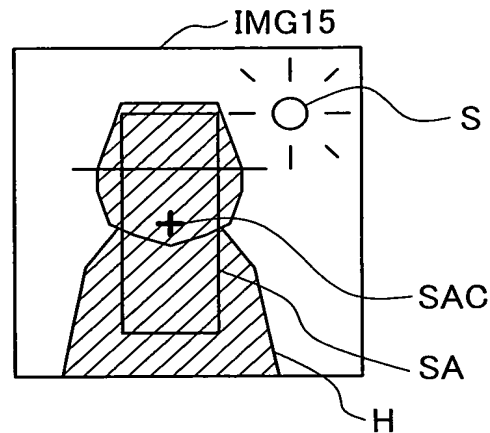


Fig.15(b)

BAave: average brightness value within subject area
 Bave: average brightness value of entire image
 k: predetermined constant

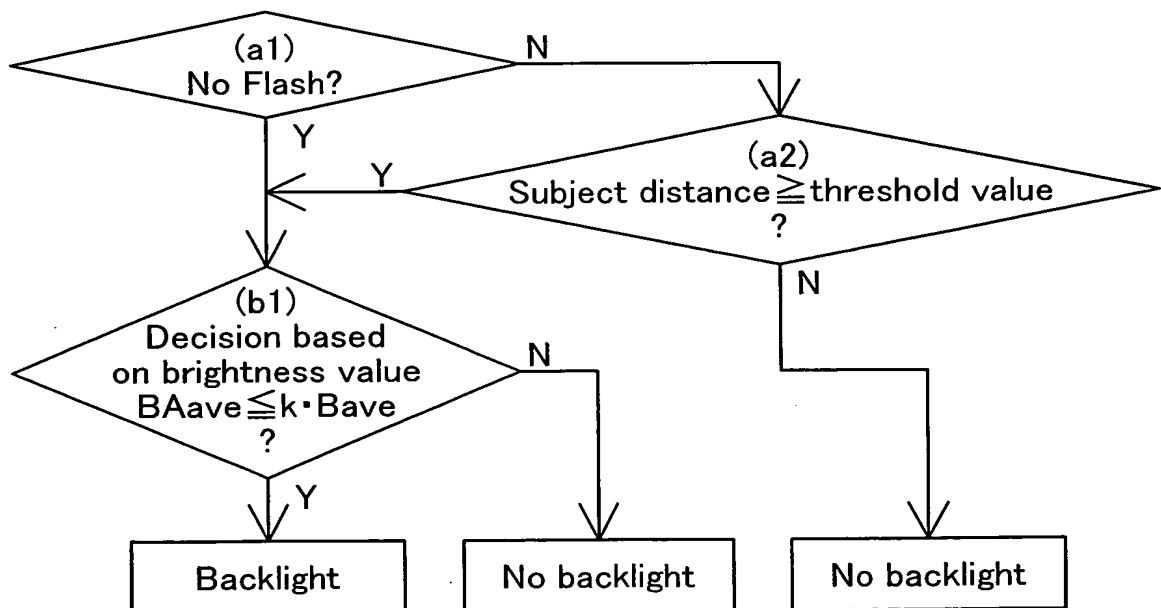


Fig.16(a)

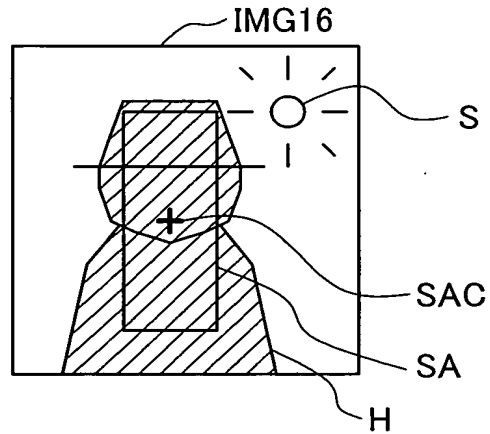


Fig.16(b)

BAave: average brightness value within subject area
 Bave: average brightness value of entire image
 k: predetermined constant

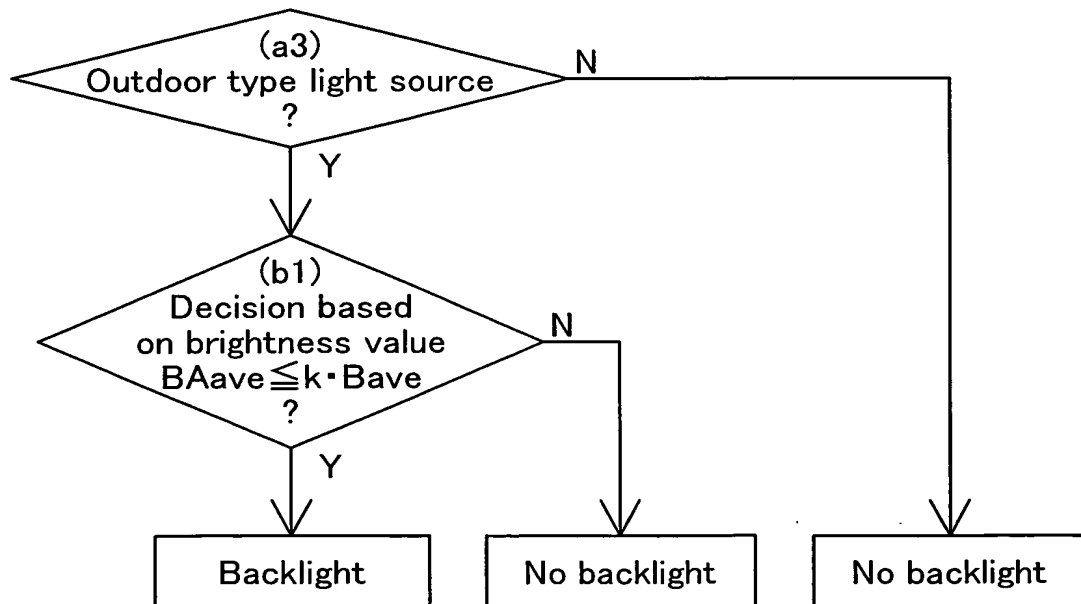


Fig.17(a)

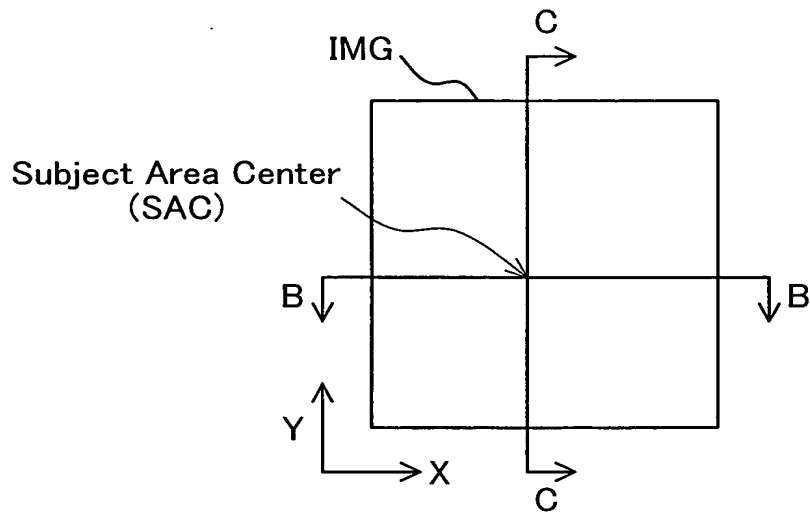


Fig.17(c)



Fig.17(b)



Fig.18(a)

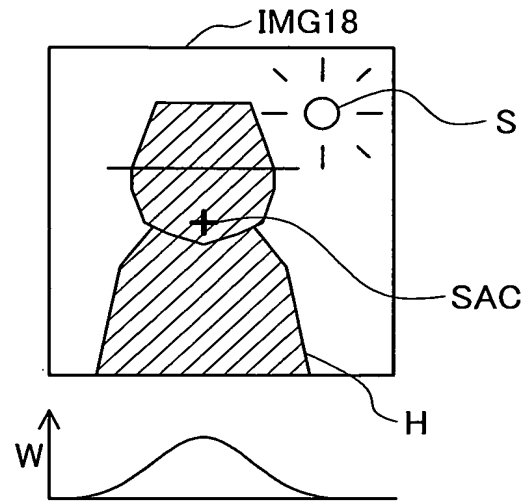


Fig.18(b)

BAWave: weighted average brightness value within subject area
 Bave: average brightness value of entire image
 k: predetermined constant

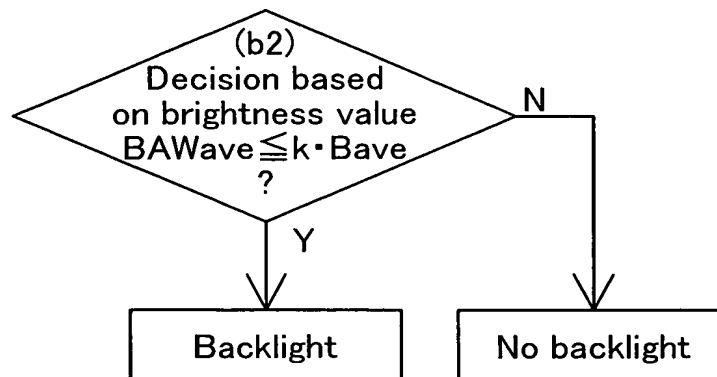


Fig.19(a)

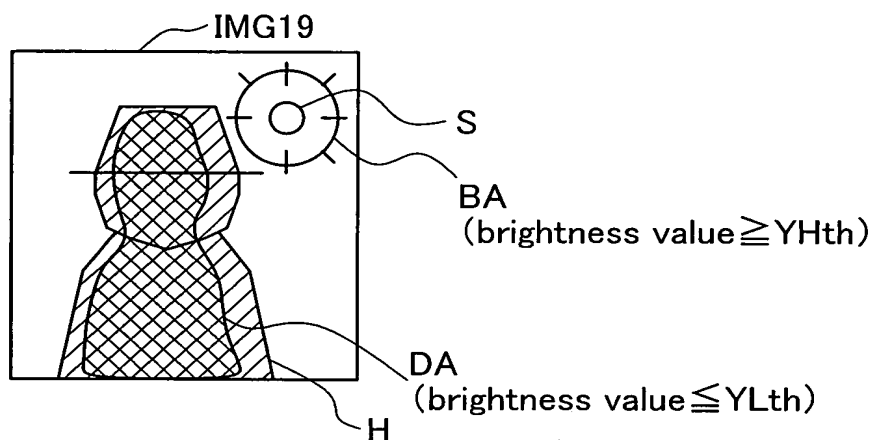


Fig.19(b)

Bratio: proportion of bright pixels (brightness value $\geq YHth$)
 Bth: bright pixel proportion threshold value
 Dratio: proportion of dark pixels (brightness value $\leq YLth$)
 Dth: dark pixel proportion threshold value

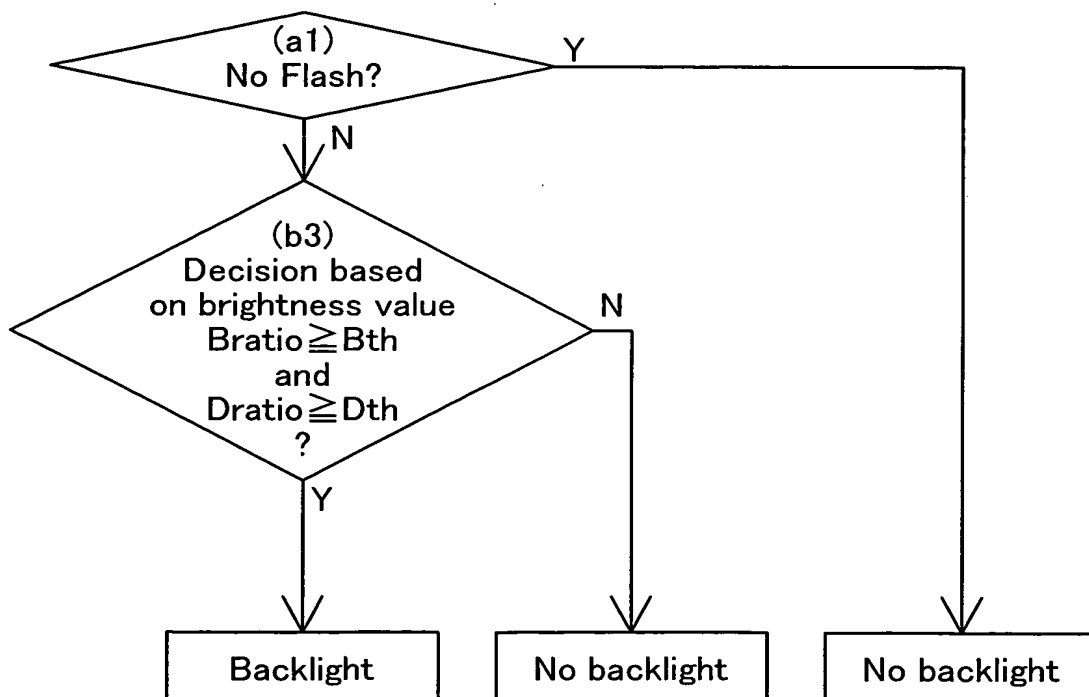


Fig.20

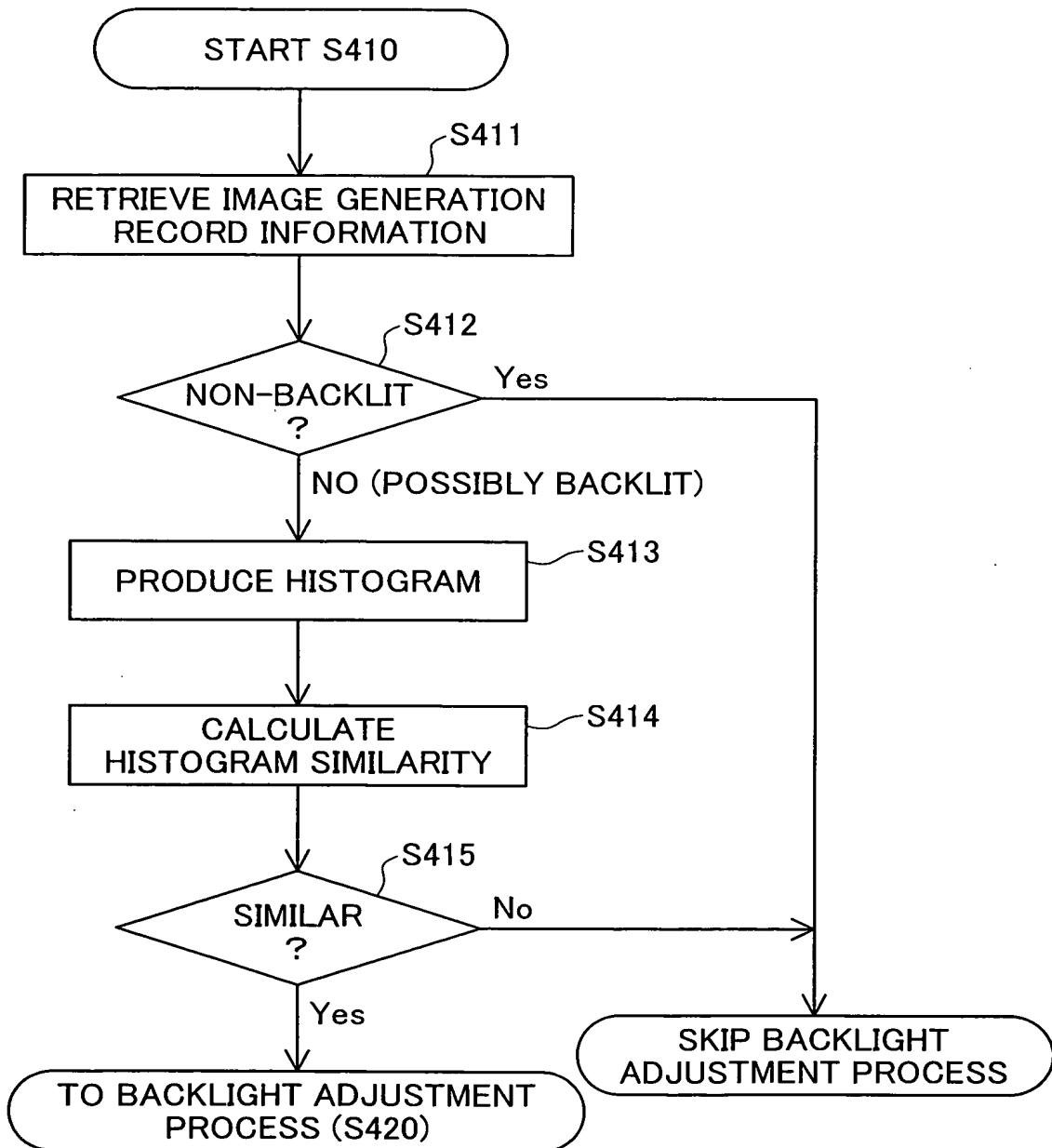


Fig.21(a)

TARGET IMAGE HISTOGRAM H_0

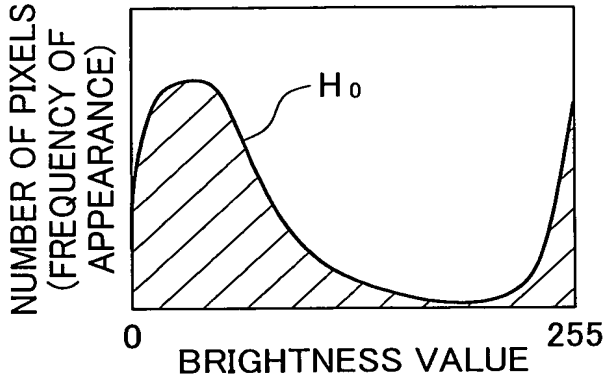


Fig.21(b)

SIMPLIFIED TARGET
IMAGE HISTOGRAM $H(j)$

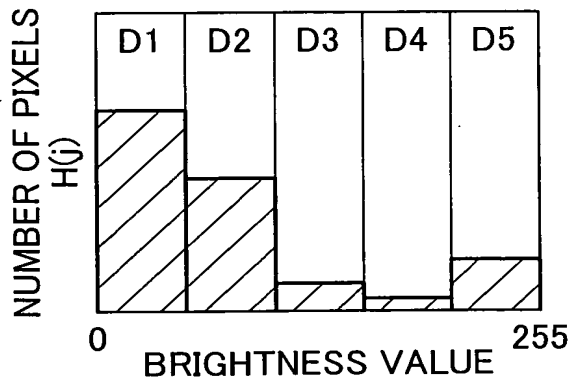


Fig.21(c)

REFERENCE HISTOGRAM $G(j)$

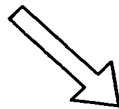
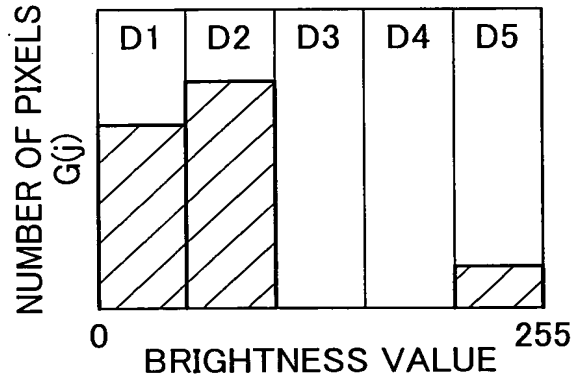


Fig.21(d) DETERMINATION OF SIMILARITY

$$SIM1 = \cos \theta = \frac{H(j) \cdot G(j)}{|H(j)| |G(j)|}$$

BACKLIT WHEN $0.84 \leq SIM1$

NON-BACKLIT WHEN $SIM1 < 0.84$

Fig.22(a)

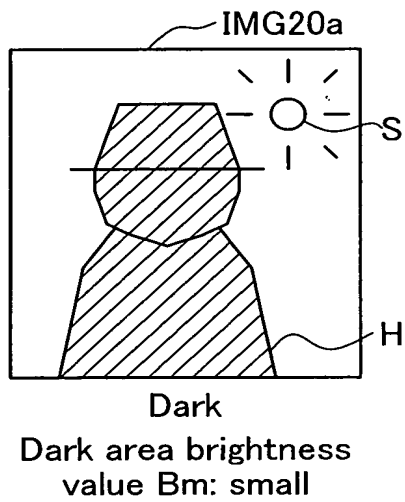


Fig.22(b)

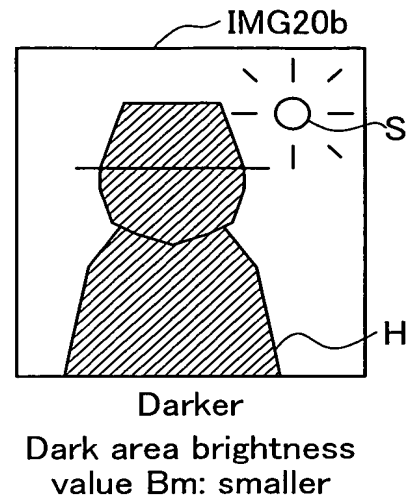


Fig.22(c)

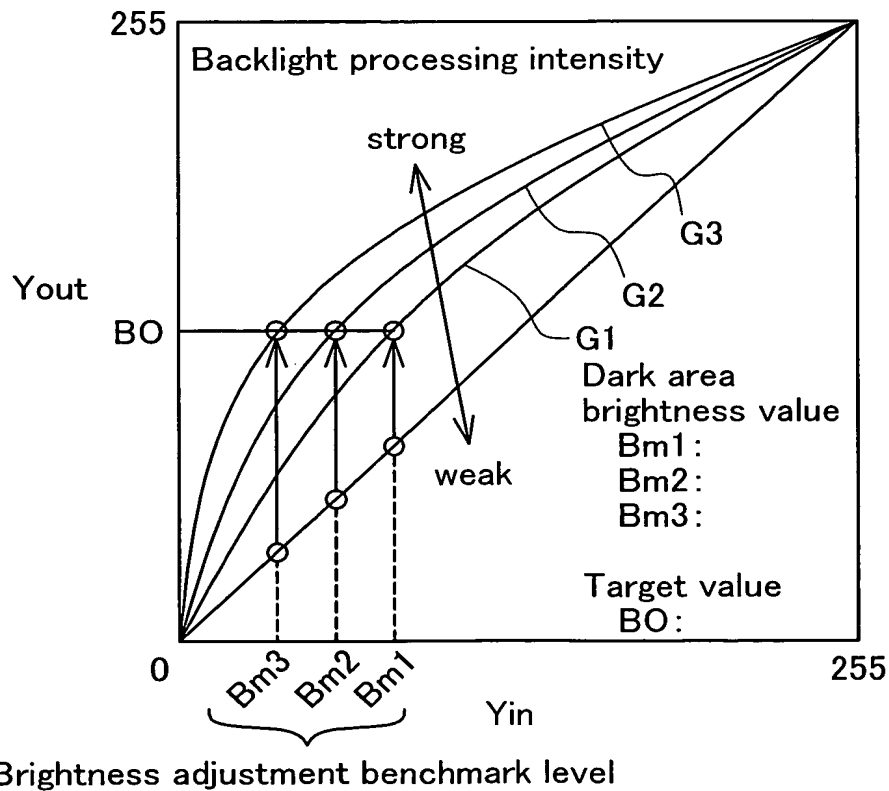
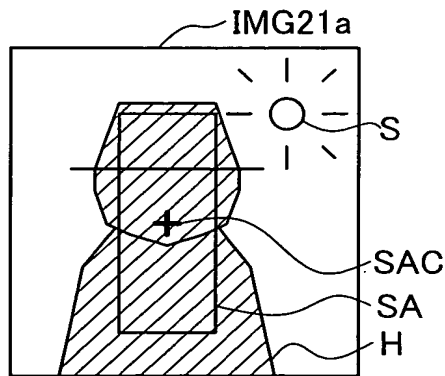


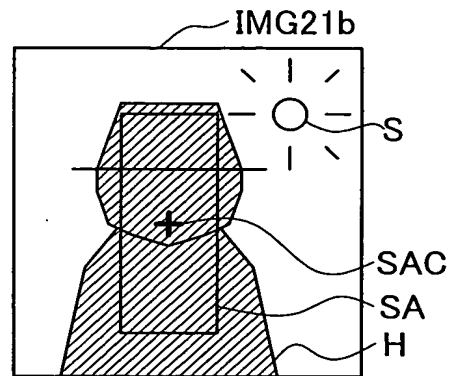
Fig.23(a)



Dark

Maximum brightness value
in subject area BAm_{max}: small

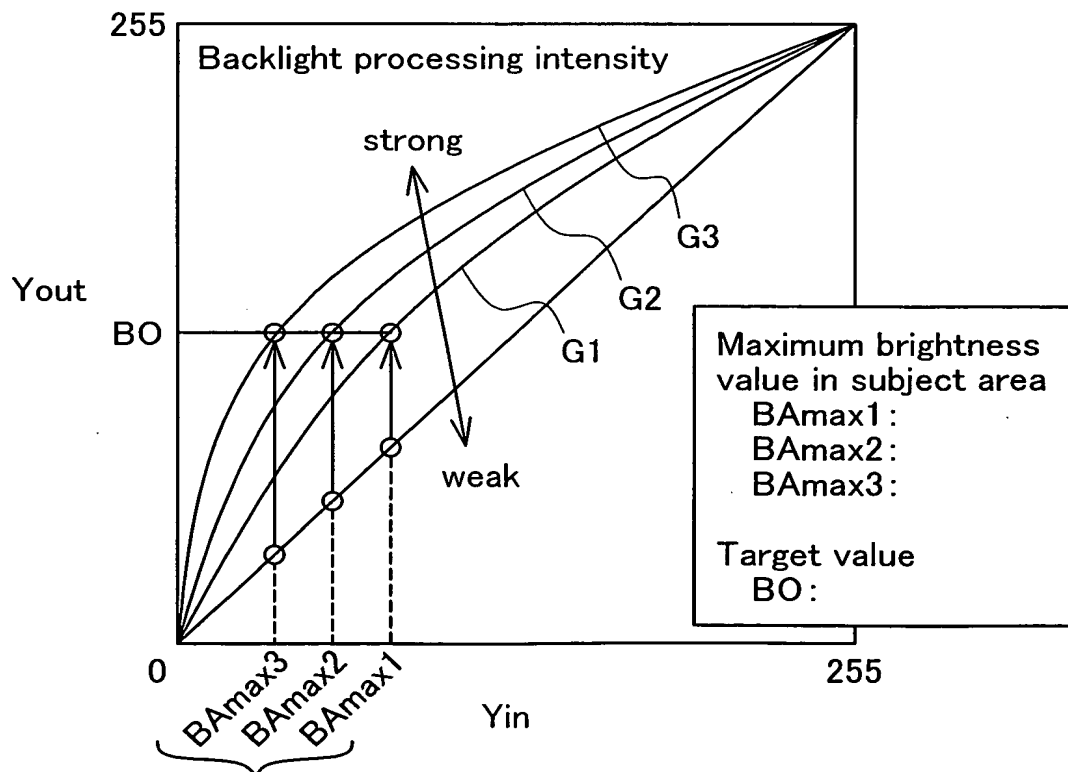
Fig.23(b)



Darker

Maximum brightness value
in subject area B_{max} : smaller

Fig.23(c)



Brightness adjustment benchmark level

Fig.24

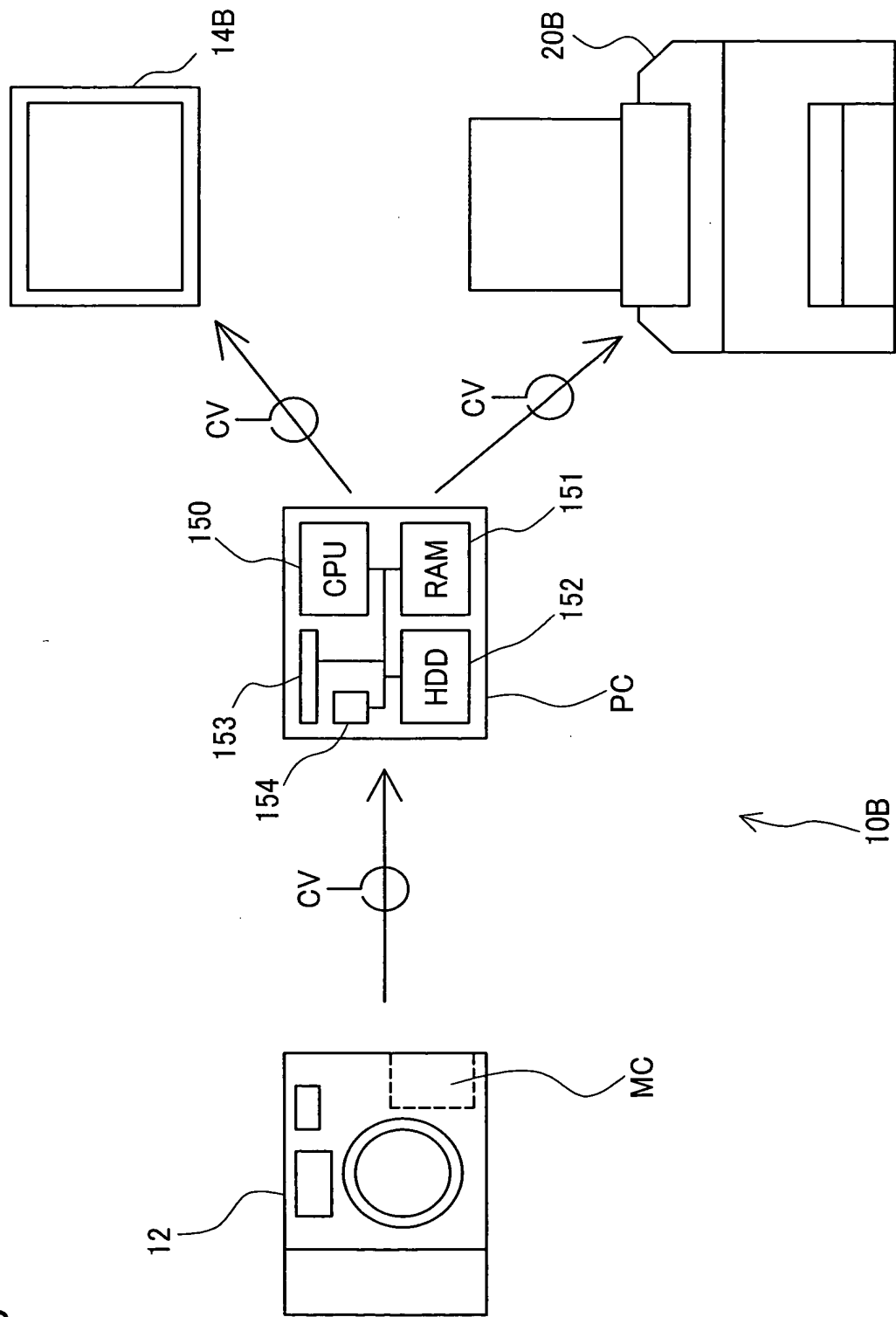


Fig.25

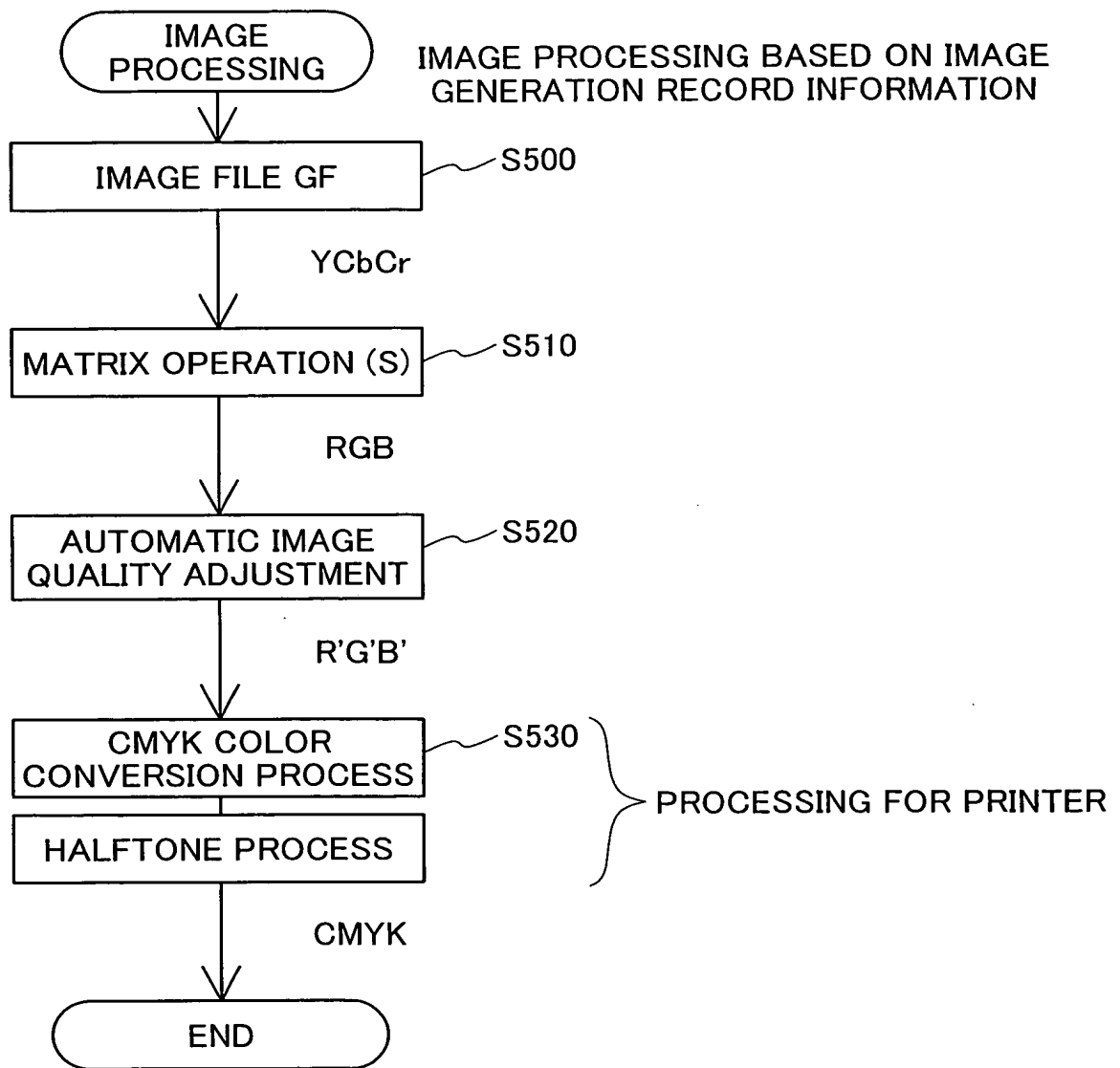


Fig.26

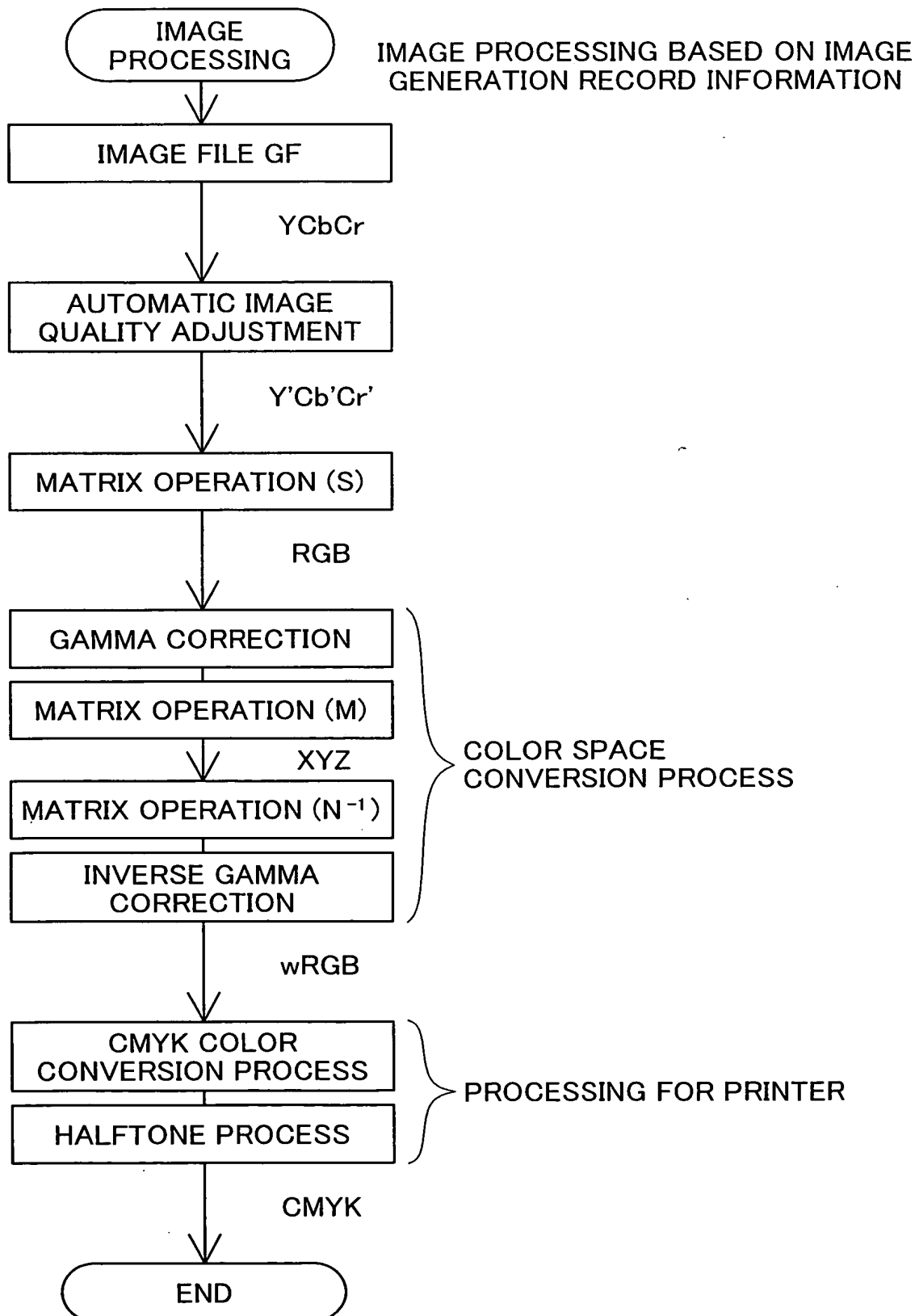


Fig.27

IMAGE PROCESSING BASED ON IMAGE
GENERATION RECORD INFORMATION

